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09/854,539

05/14/2001

Steven Towle

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06/28/2006

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EXAMINER

CHAMBLISS, ALONZO

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 06/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/854,539

Applicant(s)

TOWLE, STEVEN

Examiner

Alonzo Chambliss

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,5 and 9-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5 and 9-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/13/06</u> | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Response to Arguments***

1. Applicant's arguments with respect to claims 1-3, 5, and 9-11 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1 and 9-11 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Fillion et al. (US 6,239,482).

With respect to Claims 1, 9, and 10, Fillion teaches a package core 18 having an opening 17 therein. A microelectronic die 12 located within the opening 17 of the package core 18. A reinforced encapsulation material 20 within the opening 17 of the package core 18 to hold the microelectronic die 12 within the package core 18, wherein the reinforced encapsulation 20 material including a polymeric resin (i.e. epoxy or plastic) with a fibrous filler (see col. 2 lines 48-67 and col. 3 lines 1-34; Figs. 1 and 7-12).

With respect to Claim 11, Fillion teaches at least one metallization layer 28 built up over the package core, wherein the at least one metallization layer 28 being conductively coupled to bond pads 35 on a surface of the microelectronic die (see col. 3 lines 35-44 and col. 4 lines 1-47; Figs. 1 and 7-12).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fillion et al. (US 6,239,482) as applied to claim 1 above, and further in view of Hotta et al. (US 5,912,320).

With respect to Claims 2 and 3, Fillion discloses the claimed invention except for individual fibers having a length between 1 micrometer and 40 micrometers with a length to width ratio that is no less than 5. However, Hotta discloses resin encapsulant 4 with individual fibers having a length between 1 micrometer and 40 micrometers with a length to width ratio that is no less than 5 (see col. 5 lines 65-67 and col. 6 lines 1-13; Fig. 4). Thus, Fillion and Hotta have substantially the same environment of a chip mounted to a substrate with a resin layer between a chip and substrate. Therefore, one skilled in the art would readily recognize incorporating fiber with the specified length and

width into the polymeric resin of Fillion, since the fiber length/width would improve moldability and the adhesivity of the resin to other members as taught by Hotta.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fillion et al. (US 6,239,482) as applied to claim 1 above, and further in view of Kato et al. (US 6,282,352).

With respect to Claim 5, Fillion discloses the claimed invention except for a fibrous filler material including carbon fibers. However, Kato discloses a fibrous filler material including carbon fibers (see col. 7 lines 29-50 and col. 17 lines 57-67). Thus, Fillion discloses the same environment of a chip mounted to a substrate and encapsulated by a molding material. Therefore, it would have been obvious to incorporate carbon fibers into the polymeric material of the Fillion, since the carbon fibers would improve the rigidity and heat resistance of polymeric material as taught by Kato.

The prior art made of record and not relied upon is cited primarily to show the product of the instant invention.

### ***Conclusion***

7. Any inquiry concerning the communication or earlier communications from the examiner should be directed to Alonzo Chambliss whose telephone number is (571) 272-1927.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-7956

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system Status information for published applications may be obtained from either Private PMR or Public PMR. Status information for unpublished applications is available through Private PMR only. For more information about the PMR system see <http://pair-dkect.uspto.gov>. Should you have questions on access to the Private PMR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or [EBC\\_Support@uspto.gov](mailto:EBC_Support@uspto.gov).

AC/June 23, 2006



Alonzo Chambliss  
Primary Patent Examiner  
Art Unit 2814